

1 (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream;

(c) combining the first pressurized mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream; and

(d) contacting a target element with the hypochlorous acid stream.

22. (new) The method of claim 21¹⁷, wherein the target element is selected from the group consisting of an animal and a carcass.

23. (new) The system of Claim 21¹⁷, wherein the target element is conveyed through a pick/kill area, wherein the target element is subjected to a hypochlorous acid stream in the pick/kill area.

24. (new) The system of Claim 21¹⁷, wherein the target element is conveyed through an evisceration area, wherein the target element is subjected to a hypochlorous acid stream in the evisceration area.

25. (new) The system of Claim 21¹⁷, wherein the target element is conveyed through a chilling area, wherein the target element is subjected to a hypochlorous acid stream in the chilling area.

26. (new) The system of Claim 21, wherein the target element also is conveyed through an evisceration area, wherein the target element is subjected to a hypochlorous acid stream in the evisceration area.

27. (new) The system of Claim 21¹⁷, wherein the target element also is conveyed through a chilling area, wherein the target element is subjected to a hypochlorous acid stream in the chilling area.

28. (new) In a system to control pathogens on a target element, the system including subjecting the target element to a disinfectant, the improvement comprising subjecting the target element to hypochlorous acid formed by the following steps:

- (a) forming an acid in a first carrier stream to form a first mixed stream;
- (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream; and
- (c) combining the first mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream, wherein the pH of the hypochlorous acid stream is between approximately 4.3 and approximately 7.0.

29. (new) The method of claim 28, wherein the target element is selected from the group consisting of an animal and a carcass.

30. (new) The system of Claim 28, wherein the target element is conveyed through a pick/kill area, wherein the target element is subjected to a hypochlorous acid stream in the pick/kill area.

31. (new) The system of Claim 28, wherein the target element is conveyed through an evisceration area, wherein the target element is subjected to a hypochlorous acid stream in the evisceration area.

32. (new) The system of Claim 28, wherein the target element is conveyed through a chilling area, wherein the target element is subjected to a hypochlorous acid stream in the chilling area.

33. (new) The system of Claim 28, wherein the target element also is conveyed through an evisceration area, wherein the target element is subjected to a hypochlorous acid stream in the evisceration area.

34. (new) The system of Claim 28, wherein the target element also is conveyed through a chilling area, wherein the target element is subjected to a hypochlorous acid stream in the chilling area.

35. (new) In a system to control pathogens on a target element, the system including subjecting the target element to a disinfectant, the improvement comprising subjecting the target element to hypochlorous acid formed by the following steps:

- (a) forming an acid in a first carrier stream to form a first mixed stream;
- (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream, and wherein the control stream with the chlorination agent is pressurized; and
- (c) combining the first mixed stream with the pressurized control stream having the chlorination agent to form the hypochlorous acid stream.

36. (new) The method of claim 35, wherein the target element is selected from the group consisting of an animal and a carcass.

37. (new) The system of Claim 35, wherein the target element is conveyed through a pick/kill area, wherein the target element is subjected to a hypochlorous acid stream in the pick/kill area.

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A' 38. (new) The system of Claim ²⁵35, wherein the target element is conveyed through an evisceration area, wherein the target element is subjected to a hypochlorous acid stream in the evisceration area.

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²⁹ 39. (new) The system of Claim ²⁵35, wherein the target element is conveyed through a chilling area, wherein the target element is subjected to a hypochlorous acid stream in the chilling area.

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⁴⁰ 40. (new) The system of Claim ²⁵35, wherein the target element also is conveyed through an evisceration area, wherein the target element is subjected to a hypochlorous acid stream in the evisceration area.

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⁴¹ 41. (new) The system of Claim ²⁵35, wherein the target element also is conveyed through a chilling area, wherein the target element is subjected to a hypochlorous acid stream in the chilling area.

Amended Claims

Please cancel claims 1-3, 6-7, and 13. Please replace the pending claims with the following correspondingly numbered amended claims.

A2 ² 4. (amended) The system of Claim ~~5~~¹, wherein the target element is a poultry product.

5. (amended) In a system to control pathogens on a target element, the system including subjecting the target element to a disinfectant, the improvement comprising subjecting the target element to hypochlorous acid formed by the following steps:

- (a) combining an acid with a first carrier stream to form a first mixed stream;
- (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream;
- (c) combining the first mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream, wherein about 77 to about 99 percent of the chlorination agent in the hypochlorous acid stream is hypochlorous acid.

A3 ¹⁰ 14. (amended) The system of Claim ~~15~~⁹, wherein the hypochlorous acid is in the form of a hypochlorous acid stream of between about 4.3 and 7.0 pH.

⁹ 15. (amended) In a system for controlling pathogens during the processing of animals into food including conveying an animal carcass through processing equipment, the improvement comprising subjecting the animal carcass to hypochlorous acid formed by the following steps:

- (a) acidifying a first carrier stream to form a first mixed stream, wherein the first mixed stream comprises carbonic acid;
- (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream;
- (c) combining the first mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream.

¹¹ 16. (amended) The system of Claim ~~15~~⁹, wherein the animal carcass is conveyed through a pick/kill area, wherein the animal carcass is subjected to a hypochlorous acid stream in the pick/kill area.

¹² 17. (amended) The system of Claim ~~15~~⁹, wherein the animal carcass is conveyed through an evisceration area, wherein the animal carcass is subjected to a hypochlorous acid stream in the evisceration area.

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A² 18. (amended) The system of Claim ⁹15, wherein the animal carcass is conveyed through a chilling area, wherein the animal carcass is subjected to a hypochlorous acid stream in the chilling area.